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Application No. 09/926,513 #5

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : A. KRELL et al.

Group Art Unit : Not Known

Appl No. : 09/926,513
(National Stage of PCT/DE00/01310)

Examiner : Not Known

I.A. Filed : 21 April 2000

For : METHOD OF PRODUCING ALUMINUM OXIDES AND PRODUCTS OBTAINED ON
THE BASIS THEREOF

INFORMATION DISCLOSURE STATEMENT



Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

Pursuant to 37 C.F.R. 1.56 and 37 C.F.R. 1.97-1.98, Applicants hereby direct the Examiner's attention to the following information.

Applicants direct the Examiner's attention to the following documents cited in International Application No. PCT/DE00/01310, and the International Search Report and/or the International Preliminary Examination Report in connection with this international application.

✓ U.S. Patent No. 4,259,311 is cited in the International Search Report as being a Category "A" document with respect to claim 7 of the International Application with particular attention being directed to the whole document.

✓ U.S. Patent No. 4,562,059 is cited in the International Search Report as being a Category "A" document with respect to claims 1-5 of the International Application with particular attention being directed to the whole document.

✓ U.S. Patent No. 5,139,540

~~U.S. Patent No. 5,395,407~~

~~DE 41 16 523 A~~ is cited in the International Search Report as being a Category "X" document with respect to claims 6-8 of the International Application, and as being a Category "A" document with respect to claims 2-5 of the International Application with particular attention being directed to column 2, lines 47-53 and the claims.

~~DE 44 07 296 A~~ is cited in the International Search Report as being a Category "A" document with respect to claims 1-8 of the International Application with particular attention being directed to column 4, line 20 to column 5, line 10, and the claims.

~~DE 195 15 820 A1~~

~~DE 196 38 442 A1~~

~~EP 0 294 208 A~~ is cited in the International Search Report as being a Category "A" document with respect to claims 1-5 of the International Application with particular attention being directed to the whole document.

~~EP 0 554 908 A~~ is cited in the International Search Report as being a Category "X" document with respect to claims 6 and 7 of the International Application with particular attention being directed to claim 1.

~~EP 0 678 489 A1~~

~~WO 95/12547~~ is cited in the International Search Report as being a Category "X" document with respect to claims 6-8 of the International Application with particular attention being directed to the claims and Example 20.

Ma, Burgard and Naß annual report of the Institute for New Materials, Saarbrücken, 1994, pp. 65-67

D. Burgard et al, annual report of the Institute for New Materials, Saarbrücken, 1996, pp. 46-49

W.M. Zeng et al., NanoStructured Materials, Vol. 10, No. 4, pp. 543-550, 1998.

A. Larbot et al., High Tech. Ceram (1987) 143-151, submitted as C. Guizard et al., Recent Advances in Ceramic Membrane Processing, pp. 2743-2754 in: P. Vincenzini (ed.) Ceramics: Charting the Future, Techna Sri., Faenza (Italy), 1995.

S. Alami-Younssi et al., Journal of Membrane Science, Vol. 102, (1995) pp. 123-129.

A.F.M. Leenars et al., Journal of Membrane Science, Vol. 24 (1985) pp. 245-260.

Li et al., Journal of Materials Science Letters, Vol. 15, (1996) pp. 1713-1715.

Bhaduri et al., NanoStructured Materials, Vol. 7, No. 5, (1996) pp. 487-496.

B.E. Yoldas, Bull. Am. Ceram. Soc., Vol. 54, No. 3, (1975) pp. 289-290

Kamiya et al., Journal of the Ceramic Society of Japan, Int. Edition Vol. 104, No. 7, (1996) pp. 664-666.

Yu et al., J. Am. Ceram. Soc., Vol. 78, No. 11, (1995) pp. 3149-3152.

Günay et al., Third Euro-Ceramics, Vol. 1, (1993) pp. 651-656.

Oberbach et al., cfi/Ber. DKG 74(1997) 11/12, pp. 719-722

Wood et al., Mater. Res. Symp. Proc. Vol. 180, (1990) pp. 97-115.

Sharma et al., J. Am. Ceram. Soc., Vol. 81, No. 10, (1998) pp. 2732-34

Copies of the International Search Report and the International Preliminary Examination Report were enclosed with the papers when entering the National Stage on November 13, 2001. The Examiner is invited to review these materials to inspect the relevance indicated during international examination with respect to the documents cited therein. In this regard, an English description of the documents cited in the International Search Report is provided herein, and an English translation of pertinent portions of the International Preliminary Examination Report are provided below, as follows:

Section V

Substantiated determination of novelty, inventive activity and usefulness according to Article 35(2); documents and explanations to support this determination.

The application relates to two chemical synthesis processes of redispersible nanocorundum powder, whereby it is possible to start from two different groups of starting materials (claim 1 - inorganic; claim 2 - organic). The resulting product is covered by claim 6, and the use of the nanocorundum powder is covered by claim 7.

In the prior art there are no mentions of the production or at least the producibility of redispersible nanocorundum powder with a particle size by volume of < 100 nm or $D_{84} < 150$ nm and < 0.05 Ma% chlorine.

According to DE 411 6523 a process is also known for producing alpha-corundum by means of hydrolytic condensation of aluminum compounds. However, it is disadvantageous with this process, i.e., that the corundum powders sinter more at higher temperatures (>900 °C, e.g., 1100 °C in the example) and thereby show particle growth.

Claims 3-5 represent preferred embodiments of the process. Claims 1-7 thus meet the requirements for novelty and inventive activity. There is no doubt about usefulness.

Applicants note that the Annex to the International Search Report indicates that U.S. Patent No. 6,030,599 is a family member of WO 95/12547; U.S. Patent No. 6,048,577 Is a family member

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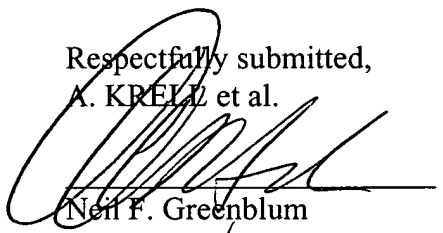
of EP 0 554 908 A; and U.S. Patent Nos. 4,954,462 and 5,185,299 are family members of EP 0 294 208 A.

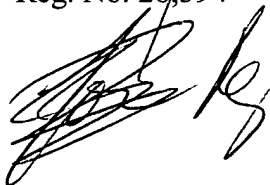
Copies of the above-noted documents are enclosed together with a duly completed Form PTO-1449. The Examiner is requested to consider each of these documents, and to make them of record in this application by initialing in the appropriate spaces on the Form PTO-1449. Applicants respectfully request that the Examiner include a copy of the initialed Form PTO-1449 with the next communication from the U.S. Patent and Trademark Office.

Should the Examiner have any questions or comments regarding this matter, the undersigned may be contacted at the below-listed telephone number.

February 13, 2002
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Respectfully submitted,
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